

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

REPORT OF EXAMINATION

TO APPROPRIATE PUBLIC WATERS OF THE STATE OF WASHINGTON

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Surface Water

(Issued in accordance with the provisions of Chapter 117, Laws of Washington for 1917, and amendments thereto, and the rules and regulations of the Department of Ecology.)

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Ground Water

(Issued in accordance with the provisions of Chapter 263, Laws of Washington for 1946, and amendments thereto, and the rules and regulations of the Department of Ecology.)

PRIORITY DATE December 28, 1992	APPLICATION NUMBER G3-29343	PERMIT NUMBER	CERTIFICATE NUMBER
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NAME

WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

ADDRESS (STREET) P.O. Box 47014	(CITY) Olympia	(STATE) Washington	(ZIP CODE) 98504-7014
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PUBLIC WATERS TO BE APPROPRIATED

SOURCE

(2) Wells (TO BE CASED AND SEALED INTO COMPETENT BASALT ROCK)

TRIBUTARY OF (IF SURFACE WATERS)

MAXIMUM CUBIC FEET PER SECOND	MAXIMUM GALLONS PER MINUTE 1000	MAXIMUM ACRE-FEET PER YEAR 490
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QUANTITY, TYPE OF USE, PERIOD OF USE

1000 gallons per minute, 490 acre feet per year, from February 1 to November 30, each year, for the seasonal irrigation of 100 acres.

LOCATION OF DIVERSION/WITHDRAWAL

APPROXIMATE LOCATION OF DIVERSION--WITHDRAWAL

- 1). 1000 feet South and 1400 feet West from the NE corner of Sec. 36
- 2). 100 feet South and 1400 feet West from the NE corner of Sec. 36

LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION) BOTH WITHIN NW 1/4 NE 1/4	SECTION 36	TOWNSHIP N. 7	RANGE, (E. OR W.) W.M. 31 E.	W.R.I.A. 32	COUNTY Walla Walla
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RECORDED PLATTED PROPERTY

LOT	BLOCK	OF (GIVE NAME OF PLAT OR ADDITION)
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LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED

The N 1/2 N 1/2 and SE 1/4 NE 1/4 of Sec. 36, T. 7 N., R. 31 E.W.M. LESS rights of way.

DESCRIPTION OF PROPOSED WORKS

Wells, pumps, pipeline, sprinklers.

DEVELOPMENT SCHEDULE

BEGIN PROJECT BY THIS DATE:

February 1, 1998

COMPLETE PROJECT BY THIS DATE:

February 1, 2000

WATER PUT TO FULL USE BY THIS DATE:

February 1, 2001

REPORT

BACKGROUND

An application to appropriate public ground water was submitted by the Washington State Department of Natural Resources (D.N.R.) to the Department of Ecology on December 28, 1992. The application was accepted and assigned Ground Water Application No. G3-29343. The applicant proposes to withdraw water from two (2) wells in the amount of 1000 gallons per minute for the seasonal irrigation of 100 acres. The proposed points of withdrawal are both to be located within the NW $\frac{1}{4}$ NE $\frac{1}{4}$ of Sec. 36, T. 7 N., R. 31 E.W.M.

A notice of application was duly published in accordance with RCW 90.03.280; no protests or objections were received.

This application is categorically exempt from the provisions of the State Environmental Policy Act (SEPA) of 1971, Chapter 43.21 RCW. A permit issued under this application would be classified as a Publicly Owned Land Permit under the Family Farm Water Act of 1977, Chapter 90.66 RCW.

INVESTIGATION

A site investigation was conducted by Bill Neve on December 12, 1995. Additional information regarding this application was obtained through research of Department records, and conversations with the applicant (Tom Buchholtz of D.N.R.) and Department staff. The project site is located approximately 1 mile East of Wallula Junction and $\frac{1}{4}$ mile South of Highway 12.

There are no existing water rights appurtenant to the subject property.

The D.N.R. is proposing to lease this site for an orchard (stone fruit). Development of such crops on this land will probably require water for frost protection and/or heat control, which is considered a separate use and, therefore, requires a separate allocation from irrigation. This was communicated to Mr. Buchholtz with the understanding that, should a permit issue, the quantities granted to any undeveloped acreage could, through an application for change in purpose, be converted for these uses.

The proposed wells will be drilled into, and withdraw water from, the Yakima Basalt Subgroup of the Columbia River Basalt Group. The Yakima Subgroup is comprised of three hydrogeologic units; in ascending order, the Grande Ronde, Wanapum and Saddle Mountains. These formations are commonly separated by sedimentary interbeds.

The basalt aquifer system is a series of zones, some of which conduct water easily. These zones of high conductivity alternate with zones of dense basalt which impede the flow of water and are considered to have low hydraulic conductivity. The highly permeable basalt zones range in thickness from a few feet to 25 feet. It is the composite of the permeable water conducting zones which provides the well with the capability of yielding the desired amount of water. Thus, generally, the deeper the well, the more water will be available since by going deeper, more permeable zones will be penetrated.

Whether the applicant will be able to obtain the desired amount of water at this particular location will be dependant, among other factors, on the completed depth of the well, the capacity of the aquifer in this area, and the well construction techniques employed by the driller.

U.S. Geological Survey maps show that the Saddle Mountain Unit in this area is relatively minor to non-existent. Because of the lack of information on the basalts in the vicinity of Wallula Junction, only gross estimates can be made regarding the other two formations. The maps show the top of the Wanapum occurring at or just below land surface, to a depth of approximately 200 feet. The Grande Ronde formation lies below the Wanapum, and extends to an undetermined depth. Well logs from wells in the area (described below) generally conform to this characterization.

Report Continued

There is one existing well within the proposed place of use. The 8-inch well was drilled through basalt to a depth of 380 feet in 1984. The well was used for domestic purposes at one time, but Mr. Buchholtz indicated that the D.N.R. plans to properly decommission this well, as they have no further use for it.

Department records show no other wells drilled into the basalts within 1 mile of the proposed wells. Most of the large production wells in the vicinity (1000-2000 gallons per minute) are drilled 100-200 feet into the upper sands and gravels, and withdraw water which is essentially bank storage of the Columbia River (Lake Wallula). There is one well located about 2 miles to the West that is drilled to 356 feet with a capacity of 35 gallons per minute. There are also 2 wells located approximately 2 miles to the East that have been drilled to depths of 639 feet and 576 feet. The combined withdrawal from these wells is 15 gallons per minute. Judging from this information, the proposed wells will most likely have to be drilled deep into the Grande Ronde formation in order to obtain the quantities of water desired.

The Wanapum and Grande Ronde formations are two distinct hydrogeologic units. In accordance with the Minimum Well Construction Standards (Chapter 18.104 RCW and Chapter 173-160 WAC) the Department is prohibited from authorizing interaquifer transfer. Upon permit approval, the subject well will be required to be constructed to effectively and permanently separate the Wanapum Unit from any surface overburden. Should the well be drilled through the Wanapum into the Grande Ronde Unit, the well shall be constructed to permanently separate these formations as well. The basalt aquifers are under artesian conditions and therefore, casing and sealing shall meet the requirements as set forth in Section 173-160-285 WAC.

Under authority of, and in response to, the Water Resources Act of 1971, Chapter 90.54 RCW, the Department of Ecology was required to formulate a management and use program for the waters of the State of Washington. The Walla Walla River Basin Management Program was developed during 1977 to determine water availability and to insure that the issuance of permits for water withdrawal would be in the public interest. The management program is administered through Chapter 173-532 WAC, adopted December 14, 1977. The proposed appropriation is subject to this management program.

Included in this regulation are requirements that new appropriators of ground water locate their wells outside of the zone of direct hydraulic continuity between surface waters and ground water aquifers (Section 173-532-050 WAC), and that each new application be evaluated to minimize interference with existing wells and surface water streams with new permits issuing only in those cases where senior water rights would not be adversely affected (Section 173-532-080 WAC).

Declining water level trends in the basalts have been identified in localized areas, primarily within the pumping centers of Walla Walla and College Place, Washington, and Milton-Freewater, Oregon. The declines seem to be centered here due to the concentration of large municipal wells pumping from the basalts and from possible compartmentalization of the aquifer caused by geologic faulting. These declines appear to represent a re-establishment of water levels coincident with increased pumping from the basalts. The proposed wells are located approximately 25 miles West (downgradient) of these pumping centers.

Existing ground water right holders are protected through administrative regulation to a depth of aquifer penetration that will allow the withdrawal of water from a reasonable or feasible pumping lift (Chapter 173-150 WAC). Through consideration of this regulation and the management program, Ecology has determined that there is still water available for appropriation from the basalt aquifers.

The Amended Instream Resources Protection Programs for the main stem Columbia River (Section 173-563-015 WAC) and main stem Snake River (Section 173-564-040 WAC) were adopted on January 3, 1995. The primary purpose of these amended programs is to temporarily withdraw from further appropriation waters from these rivers due to fishery concerns. These amended programs also subject groundwater determined to be in direct hydraulic continuity with these rivers to the withdrawals. After review of pertinent records and consultation with Department hydrogeologists, it is the determination of this writer that the proposed appropriation will not be in direct hydraulic continuity with the Snake or Columbia Rivers.

CONCLUSIONS

It is the conclusion of the examiner that: Irrigation is a beneficial use of water. Subject to the provisions of Chapter 173-532 WAC and regulation in favor of senior rights, public ground water is available for the proposed beneficial irrigation use.

The proposed withdrawal should not impair the aquifers ability to satisfy existing rights. Existing water right holders may have to insure their wells meet well construction standards and fully penetrate the aquifer in accordance with Section 173-150-080(3) WAC. This may include deepening wells and lowering pump settings to allow them to take advantage of water in the aquifer.

The appropriation of such water will not be detrimental to the public welfare provided existing rights are protected.

Washington State University Agriculture Department Extension Bulletin No. 1513 is used as a guide for determining seasonal amounts of irrigation water by geographic location. These amounts are calculated on a 80% system efficiency from the 10 year frequency table and for maximum irrigation water requirement for peaches with cover crop. Based upon data in this circular a maximum water duty for this area is 58.75 inches per acre, for an annual allotment of 490 acre feet for the seasonal irrigation of 100 acres. This annual quantity may be reduced upon issuance of a certificate depending upon the actual crop developed.

This application for a permit to appropriate public ground water should be approved in the amount of 1000 gallons per minute, 490 acre feet per year, from February 1 to November 30, each year, for the seasonal irrigation of 100 acres.

Due to the nature of the project, an extended development schedule was agreed to with the applicant.

To ensure proper well construction and to provide Ecology with additional information on the structure of the basalts in this area, a video scan of the completed wells will be required. A copy of the scan(s) shall be delivered to and reviewed by Ecology prior to the production pumps being installed in the subject wells.

A flow meter which measures both instantaneous and cumulative discharge will be required to be installed at the point of discharge for each well. While reporting requirements are not in effect for the subject wells at this time, Ecology may require that meter readings be submitted at a future date.

In addition to an access port, an airline will be required to be installed in the completed wells.

The following provisions apply:

"The casing shall be set or placed at least five (5) feet into the first solid, unfractured, nonporous, nonvesicular basalt flow occurring within the formation the well is finished into. Should the well bore extend into the Grande Ronde Unit, the well shall be constructed so as to effectively and permanently seal the Wanapum from the Grande Ronde formation."

"After completion of construction, the wells shall be video scanned (providing a visually clear and recognizable picture that is continuous from land surface to the terminus of the well) and the video tape(s) reviewed by the Eastern Regional Office of the Washington State Department of Ecology prior to installation of the production pumps."

"Use of water under this authorization shall be contingent upon the water right holder's utilization of up to date water conservation practices and maintenance of efficient water delivery systems consistent with established regulation requirements and facility capabilities."

"Approved measuring devices shall be installed and maintained in accordance with RCW 90.03.360 and/or WAC 508-64-020 through WAC 508-64-040." (Installation, operation and maintenance requirements attached hereto).

"The amount of water granted is a maximum limit that shall not be exceeded and the water user shall be entitled only to that amount of water within the specified limit that is beneficially used and required for the actual crop grown on the number of acres and the place of use specified."

"This authorization to make use of public waters of the state is subject to existing rights, including any existing rights held by the United States for the benefit of Indians under treaty or otherwise."

"A certificate of water right will not be issued until a final examination is made."

"All water wells constructed within the state shall meet the minimum standards for construction and maintenance as provided under RCW 18.104 (Washington Water Well Construction Act of 1971) and Chapter 173-160 WAC (Minimum Standards for Construction and Maintenance of Water Wells)."

"The installation of an access port, described in Ground Water Bulletin #1, shall be required prior to issuance of a final certificate of water right. In addition, an airline and pressure gage shall be installed and maintained in operating condition. The pressure gage shall be equipped with a standard tire valve and placed in an accessible location. The airline shall extend from land surface to the top of the pump bowls and the total airline length shall be reported to the Department of Ecology upon completion of the pump system."

Report Continued

"Well logs of the completed wells shall be submitted by the driller to the Department of Ecology within thirty (30) days of completion of these wells. These well logs shall be complete and all information concerning the static water level in the completed well in addition to any pump test data shall be submitted as it is obtained."

"This authorization to use public waters of the state is classified as a Publicly Owned Land Permit in accordance with Chapter 90.66 RCW (Initiative Measure No. 59)."

Signed at Spokane, Washington
this 16th day of February, 1996

for Cindy A. Christian
WILLIAM L. NEVE
Shorelands and Water Resources Program
Department of Ecology



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

4601 N. Monroe, Suite 202 • Spokane, Washington 99205-1295 • (509) 456-2926

February 16, 1996

Washington State Department
of Natural Resources
Post Office Box 47014
Olympia, WA 98504-7014

Gentlemen:

RE: Ground Water Application No. G3-29343

Enclosed please find a copy of the Department of Ecology's Report of Examination. This report constitutes our determination and order regarding the above referenced application.

Your application has been approved and a permit will be issued in accordance with the enclosed Report of Examination upon payment of the statutory fee of \$40.00. Please remit your payment by check to the Department of Ecology within thirty (30) days from receipt of this letter.

Issuance of this Report of Examination is an appealable decision under Chapter 43.21B RCW. If you would like to appeal this order and determination, you must file your appeal with the Pollution Control Hearings Board, P. O. Box 40903, Olympia, WA 98504-0903 within thirty (30) days of your receipt of this letter and the attached Report of Examination. A copy of your appeal must also be sent to the Department of Ecology, Shorelands and Water Resources Program, c/o Linda Pilkey-Jarvis, P.O. Box 47600, Olympia, WA 98504-7600 within thirty (30) days of receipt of this letter and the attached Report of Examination.

Sincerely,

Bruce F. Howard
Section Manager
Shorelands and Water Resources Program

BFH:mjw
Enclosure